



# NASA & The Cold War

Exploring the impacts of NASA Langley during the Cold War



# Lesson Plan

**Previous Knowledge & Materials Needed:** Previous knowledge of key Cold War events and political ideologies; Computer with internet access; Partner, Presentation, Paper Project: NASA Langley & The Cold War; Material and/or software to make visual component of group presentation

**Virginia Standards of Learning:** Standard VUS 13: The student will demonstrate knowledge of United States foreign policy since World War II by: b) explaining the origins of the Cold War, and describing the Truman Doctrine and the policy of containment of communism, the American role in wars in Korea and Vietnam, and the role of the North Atlantic Treaty Organization (NATO) in Europe; c) explaining the role of America's military and veterans in defending freedom during the Cold War. Standard VUS. 15: The student will demonstrate knowledge of economic, social, cultural, and political developments in recent decades and today by: c) explaining the media influence on contemporary American culture and how scientific and technological advances affect the workplace, health care, and education.

**Essential Question:** What impact did NASA Langley have on the role of the United States in the Cold War?

**Objectives:** This project is intended to be used in a high school social studies class. It is designed to familiarize students with the impact that the research conducted at NASA Langley had on the role of the United States in the Cold War. Students will analyze primary and secondary source documents in order to thoroughly understand the social impacts of the research conducted at NASA Langley during the Cold War era. Students will work in groups to do research and create presentations on a chosen topic. Research shows that working in small groups is a beneficial learning opportunity that allows students to collaborate and engage one another in rich discussion (Cohen, 1997). Background research and primary source analysis will be guided by scaffolded prompts that cover a range of lower level and higher level critical thinking skills. Students will be asked to comprehend, apply, analyze, and synthesize, researched information in order to develop a thorough understanding of subject topic (Bloom, 1956). Students will then evaluate group presentations and research and conclude project with an individually produced reflection paper.

**Procedure:**

1. Teacher should provide background instruction on the origins and key events of the Cold War
2. Teacher will hand out project instructions, review the instructions, and ask questions for clarification
3. Students will choose group members and select a research topic listed in the project guidelines
4. Teacher will designate project deadlines and provide dates and order of group presentations
5. Students groups will facilitate research and presentation creation in accordance with project guidelines
6. Students will present in groups
7. Students will complete project by submitting individual reflection papers

**Suggested Time Allotted:** It is recommended that this project cover a period of 3-5 class sessions. Classwork, homework, and presentation dates should be assigned in accordance with the individual teacher's needs and preferences.

**Evaluation/Assessment:** Students will be evaluated on an individual bases using the included grading rubrics. It is recommended that at least 60% of the total grade come from the presentation score and 40% of the grade come from the reflection paper.

**Extended Learning Opportunities:** For more information regarding the NASA Langley Research Center please visit the following link: [http://crgis.ndc.nasa.gov/historic/Langley\\_Research\\_Center](http://crgis.ndc.nasa.gov/historic/Langley_Research_Center)



# Partner, Presentation, Paper Project:

## *NASA Langley & The Cold War*

**Project Description:** This project is designed to help students understand the impact that NASA Langley had on the role of the United States in the Cold War. Students will be asked to work in groups to research topics specifically associated with NASA Langley during the Cold War era. Student groups will be researching and analyzing primary and secondary source documents found within the NASA Langley Research Center archives for the purpose of creating a group presentation on their chosen topic. Once presentations have all been given, students will complete the project by individually writing a reflective paper evaluating their experiences and understanding of the impacts of the research conducted at NASA Langley during the Cold War Era.

**NASA Langley & The Cold War Background:** The NASA Langley Research Center (LaRC), located in Hampton, Virginia, played a vital role in the technological advances of the United States during the Cold War. The development of cutting-edge military aircraft technology and the Space Program helped the United States maintain a superior position during the feverish arms race and space race with the Soviet Union.

**PART 1: Groups must pick one of the following topics associated with NASA Langley's involvement during the Cold War.**

7 X 10-Foot Low Speed Tunnel  
16-Foot Transonic Dynamics Tunnel  
8-Foot High Speed Tunnel  
Unitary and Continuous-Flow Hypersonic Tunnels  
Physical Research Lab  
X-15  
30 X 60 Full Scale Tunnel  
National Transonic Facility  
Rendezvous Docking Simulator  
Impact Dynamics Research Facility  
Space Shuttle Program  
Landing Loads Facility  
Impact Dynamics Research Facility  
1247 Hypersonic Facilities Complex

**PART 2: Each group must prepare a presentation for their topic. Research will be broken into three objectives:**

Objective 1: Students groups will research **background information** on their topic by following guidelines below:

- ☐ Begin research by searching chosen topic on the NASA LaRC website ([http://crgis.ndc.nasa.gov/historic/Cold\\_War](http://crgis.ndc.nasa.gov/historic/Cold_War))
- ☐ Research Requirements:
  - At least 5 primary and secondary sources must be used
  - At least 4 sources must be affiliated with NASA LaRC
  - At least 1 of the sources must be a film produced by NASA LaRC

- Research must respond to the following prompts:
  - Briefly describe and summarize the chosen topic.
  - How is the topic affiliated with NASA Langley?
  - Why is the topic significant?
  - What conclusions can be drawn about the topic's relationship to the Cold War?
  - What evidence can be found associating the topic with the role of the United States during the Cold War?

Objective 2: Students will thoroughly analyze **one primary source** associated with their topic by following guidelines below:

- Primary Source Requirements:
  - Source must be affiliated with the NASA LaRC
  - Source must be document based
  - A digital copy of primary source must be attained (for use with presentation and/or paper)
- Source analysis must respond to the following prompts:
  - What type of document is chosen source?
  - When was the source created?
  - Who created the source?
  - Who is the intended audience for the source?
  - What evidence explains why the source is significant?
  - What evidence connects source to chosen topic?
  - What does source communicate about the United States during the time period it was created?
  - What is one question left unanswered by the author of the source?

Objective 3: Students will create a **presentation** using the following guidelines:

- Presentation must be 10-15 minutes long
- Each group member must participate in the creation and presentation of information
- Presented information must include research collected in previous objectives
- Presentation must include visual elements (posters, powerpoint, etc.)
- Groups must be prepared to respond to audience questions at the end of presentation
- A works cited reference must be included in presentation

**PART 3: Students will individually write a reflective essay based on their project experience and evaluation of the material presented in group presentations using the following guidelines:**

- Paper Requirements:
  - Paper must use 12 pt. font
  - Paper must be double spaced
  - Paper must be 500-600 words
  - Paper must reference at least 1 other group presentation
- Paper must respond to the following prompts:
  - How would you describe your experience working in a research group?
  - What did you find interesting and/or exciting in your research?
  - In your own words, how would you describe the significance of your group's research topic?
  - Using evidence from the group presentations, how can you compare the significance of your topic with the topic chosen by another group?
  - Using evidence from the group presentations, how do you interpret the impact of NASA Langley on the role of the United States in the Cold War?

# Oral Presentation Rubric

CATEGORY	4	3	2	1
<b>Content</b>	Shows a full understanding of the topic.	Shows a good understanding of the topic.	Shows a good understanding of parts of the topic.	Does not seem to understand the topic very well.
<b>Preparedness</b>	Student is completely prepared and has obviously rehearsed.	Student seems pretty prepared but might have needed a couple more rehearsals.	The student is somewhat prepared, but it is clear that rehearsal was lacking.	Student does not seem at all prepared to present.
<b>Stays on Topic</b>	Stays on topic all (100%) of the time.	Stays on topic most (99-90%) of the time.	Stays on topic some (89%-75%) of the time.	It was hard to tell what the topic was.
<b>Collaboration with Peers</b>	Almost always listens to, shares with, and supports the efforts of others in the group. Tries to keep people working well together.	Usually listens to, shares with, and supports the efforts of others in the group. Does not cause \"waves\" in the group.	Often listens to, shares with, and supports the efforts of others in the group but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others in the group. Often is not a good team member.
<b>Comprehension</b>	Student is able to accurately answer almost all questions posed by classmates about the topic.	Student is able to accurately answer most questions posed by classmates about the topic.	Student is able to accurately answer a few questions posed by classmates about the topic.	Student is unable to accurately answer questions posed by classmates about the topic.

# Paper Rubric

CATEGORY	4	3	2	1
<b>Quality of Information</b>	Information clearly relates to the main topic. It includes several supporting details and/or examples.	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.	Information clearly relates to the main topic. No details and/or examples are given.	Information has little or nothing to do with the main topic.
<b>Organization</b>	Information is very organized with well-constructed paragraphs and clear transitions.	Information is organized with well-constructed paragraphs.	Information is organized, but paragraphs are not well-constructed.	The information appears to be disorganized. 8)
<b>Paragraph Construction</b>	All paragraphs include introductory sentence, explanations or details, and concluding sentence.	Most paragraphs include introductory sentence, explanations or details, and concluding sentence.	Paragraphs included related information but were typically not constructed well.	Paragraphing structure was not clear and sentences were not typically related within the paragraphs.
<b>Mechanics</b>	No grammatical, spelling or punctuation errors, and proper formatting is implemented.	Almost no grammatical, spelling or punctuation errors, and proper formatting is implemented.	A few grammatical, spelling, or punctuation errors, and proper formatting is not entirely implemented.	Many grammatical, spelling, or punctuation errors, and proper formatting is not implemented.
<b>Amount of Information</b>	All topics are addressed and all questions answered with 500-600 words.	All topics are addressed and all questions answered with 400-500 words.	All topics are addressed and most questions answered with with 300-400 words.	One or more topics were not addressed and some questions answered with less than 300 words.

# References

Bloom, B. S. (1956). *Taxonomy of educational objectives; the classification of educational goals*,. New York: Longmans, Green.

Cohen, E. G., & Lotan, R. A. (1997). *Working for equity in heterogeneous classrooms: sociological theory in practice*. New York: Teachers College Press.

Langley Research Center. *NASA LaRC*. Retrieved July 23, 2014, from [http://crgis.ndc.nasa.gov/historic/Langley\\_Research\\_Center](http://crgis.ndc.nasa.gov/historic/Langley_Research_Center)